

REMARKS

In the Office Action of August 18, 2005, claims 8 and 9 were allowed and claims 2-7 were indicated as containing allowable subject matter, which actions are much appreciated by Applicant. Claims 1 and 10 were, however, rejected under §103 as being unpatentable over Bourcier and Deane. This rejection is respectfully traversed and reconsideration is respectfully requested in view of the following remarks.

The Bourcier patent describes an optical positioner including a base having two or more raised arms. The interiors of the arms are machined so as to have arcuate surfaces defining a portion of a cylindrical shell. The machining is performed so that the cylindrical shell portions formed by the raised arms have the same center of curvature. Fit within the arms is a mounting plateform 14 which has outer surfaces formed complimentary to the cylindrical surfaces of the arms. With this construction, the mounting platform 14 is rotatable within the base 12 as shown, e.g., in Figure 2.

The Examiner suggests that Bourcier discloses the claimed invention except for “features...manufactured to the same tolerance by being chemically etched by the same process”. However, Applicant respectfully disagrees with this conclusion. In the first instance, each of the elements described in claims 1 and 10 (e.g., base plate, rotatable plate, sliding plate) are purposefully described as “plates”. While it is understandable that some degree of latitude is appropriate when interpreting this term, Applicant would not expect the ordinary meaning of “plate” to extend to a construction like that of Bourcier where the thickness of the elements

actually exceeds the width thereof. Stated somewhat differently, it is not believed appropriate to refer to the base 12 of Bourcier (see Figure 1) as being a “plate”.

Furthermore, each of claims 1 and 10 refer to a base plate, whereas Bourcier does not depict a base plate of any form. This reference cannot therefore be said to disclose a base plate having chemically etched features, as called for in claim 1, or a base plate prepared through an etching process, as called for in claim 10. To the extent that Bourcier contemplates a base plate at all, the same is simply an interior surface of an optical package as described in column 4 of the patent.

Furthermore, it is apparent that Bourcier includes no chemically etched features whatsoever, rather, the components are described as being formed by conventional machining, casting or injection molding techniques. Indeed, given that the Bourcier device relies in general upon precision-formed mating cylindrical surfaces for its operation, it is apparent that chemical etching would not be an appropriate manufacturing technique for this device.

The Examiner indicates that the various shortcomings of Bourcier are compensated for by the teachings of Deane. Applicant respectfully traverses this notion and, furthermore, submits that Deane is not in fact even relevant for the specific point that the Examiner cites it for.

Specifically, the Examiner states that Deane discloses an optical alignment device “comprising features 16 and 20 that are etched to the same tolerance by a common etching process”. However, a close inspection of Deane’s disclosure reveals that this reference not only fails to disclose this proposition, but, further, it would be substantially impossible for the Examiner’s comment regarding Deane to be correct.

Deane describes a “silicon bench” for aligning optical fibers with associated optical components. The optical bench is a one-piece element consisting of a silicon slab having various features formed therein “using well-known semiconductor processing techniques”. (See page 2, paragraph 0020). As perhaps best shown in Figure 1, the silicon slab 10 includes a V-groove 22 etched therein, and also includes a rectangularly shaped recess 16 formed therein which is intended to house and support a lens 18.

Here, it is important to discuss what Deane does not disclose. First of all, it is never stated in Deane that the V-groove 20 and the recess 16 are formed at the same time or by the same chemical etching process. Further, it is nowhere stated in Deane that recess 16 and V-groove 20 are “etched to the same tolerance”. Although a tolerance of one micron is mentioned in Deane, it is noted that a tolerance of this size is exceptionally poor in semiconductor processing, where alignments are generally measured in nanometers. If anything, the mention of one micron tolerances suggests that the recess 16 and V-groove 20 are not formed either at the same time or by the same process.

Further, the Examiner’s apparent assumption that recess 16 and V-groove 20 are capable of being formed at the same time by the same chemical etching process reveals a lack of understanding of semiconductor processing techniques. For example, the formation of a V-groove in silicon by etching is not a simple process. In order to obtain a standard 45° V-groove, for example, it is necessary to obtain specialty sliced silicon wafers where the flat is cut at a 9.7° angle to the (100) crystallographic face. The V-groove is then formed by (typically) a wet etching process. In contrast, in order to form a rectangular shaped recess such as shown at 16 in

Deane, it is most common to use a dry-etching process, and it is also most common to etch directly into the (100) face plane. While it is admittedly not known precisely how the structure of Deane is formed, it is abundantly clear that the illustrated construction can not be made by a single chemical etching process using "well known semiconductor processing techniques". Therefore, not only does Deane fail to disclose "features manufactured to the same tolerance by being chemically etched by the same process", but it is highly improbable to impossible that such a feat could in fact be achieved.

Although the above argument applies primarily with respect to claim 1, it is apparent that similar arguments apply equally to claim 10. Claim 10 requires that each of the base place, sliding plate and rotatable plate be "prepared through a common etching process". Neither of the reference of record teach or suggest this process step. Moreover, as indicated previously, neither of the references describe applying any common process to all three (base, slider, rotator) elements.

From the foregoing, it is believed apparent that the claimed invention is not and cannot be obvious in view of the combined teachings of the references selected by the Examiner. Obviousness requires a motivation for combination, and certainly none can be found in these two references. Further, obviousness requires a high expectation of successful combination, whereas here that expectation is essentially nil. Accordingly, reconsideration of the rejection is respectfully requested.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

RESPONSE
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Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Richard C. Turner
Registration No. 29,710

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
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